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THE CONCEPT OF IMMEDIACY

THE attempt to determine the character and import of immediacy, as a concept in present-day thought, finds its most promising point of departure in the philosophy of Kant. While it is true that the "back to Kant" movement has been in abeyance of late, the present time is peculiarly in need of reflection upon its borrowings from the Kantian philosophy, in so far as these relate to the issues involved in current controversy. The fundamental issue, in fact, between objective idealism and its opponents may be conveniently centered about the treatment which Kant accords to the concept of immediacy. According to recent critics of objective idealism, this concept is made to cover two divergent and incompatible meanings, a confusion which has been perpetuated by his followers down to the present day.

Stated somewhat generally, the problem which Kant set himself to solve was to ascertain how the concepts of the understanding justify their claim to validity within experience. This problem was particularly acute, owing to the sharp separation postulated by Kant between sense and understanding. The categories of the understanding, as he says, "are not conditions under which objects can be given in intuition, and it is quite possible therefore that objects should appear to us without any necessary reference to the functions of the understanding."[1] "It can not be denied that phenomena may be given in intuition without the functions of the understanding."[2] "We could quite well imagine that phenomena might possibly be such that the understanding should not find them conforming to the conditions of its synthetical unity, and all might be in such confusion that nothing should appear in the succession of phenomena which could supply a rule of synthesis, and correspond, for instance, to the concept of cause and effect, so that this concept would

[1] "Critique of Pure Reason," p. 74. All the references are to the translation by Max Müller.

[2] *Ibid.*, p. 75.

thus be quite empty, null, and meaningless. With all this phenomena would offer objects to our intuition, because intuition by itself does not require the functions of thought."[3]

From this standpoint immediacy is necessarily identified with the material of sense, considered without reference to the concepts of the understanding. Concerning this material of sense, considered by itself, there can be no question of truth or falsehood, such as arises at once when the concepts of the understanding come into play. This separation, however, of sense and understanding disappears as Kant proceeds. "Every representation," as he explains, "contains something manifold, which could not be represented as such, unless the mind distinguished the time in the succession of one impression after another; for as contained in one moment, each representation can never be anything but absolute unity. In order to change this manifold into a unity of intuition (as, for instance, in the representation of space), it is necessary first to run through the manifold and then to hold it together."[4] "Connection, however, does never lie in the objects, and can not be borrowed from them by perception, and thus be taken into the understanding, but is always an act of the understanding, which itself is nothing but a faculty of connecting *a priori,* and of bringing the manifold of given representations under the unity of apperception, which is, in fact, the highest principle of all human knowledge."[5]

Considerations of this kind evidently require a profound modification of the standpoint maintained by Hume. In the first place, we are led to a radically different conception of immediacy. The sense impressions which at the outset represented the sum total of immediate experience, are now placed under the ban as empty abstractions. "Perception without conception is blind." And, secondly, we are required to postulate a process of synthesis, not as an experienced fact, but as a precondition of all experience. That is, this reconstruction of immediacy is bound up with a non-spatial and non-temporal fact. "The mind could never conceive the identity of itself in the manifoldness of its representations (and this *a priori*) if it did not clearly perceive the identity of its action, by which it subjects all synthesis of apprehension (which is empirical) to a transcendental unity."[6] While Kant does not set forth clearly the precise character either of this new immediacy or of this numerical identity pervading experience, the implication of both in his standpoint seems to be reasonably plain.

[3] *Ibid.*, p. 75.
[4] *Ibid.*, p. 82.
[5] *Ibid.*, p. 747.
[6] *Ibid.*, p. 89.

Viewed as an argument, Kant's disquisition possesses an inherent weakness to which his critics have given due attention. The fallacy of assuming in the premises what is denied in the conclusion is so painfully evident that extended exposition is superfluous. If we assume, to start with, that experience consists, in the first instance, of relationless sensations, we are indeed obliged to infer a transcendental unity of apperception; but when we look back from the end of the argument to the beginning, we find that these relationless sensations are altogether fictitious. The transcendentalist who reasons in this fashion is simply sawing off the bough by which he is supported. The final result does not stand forth as a demonstrated conclusion, but as an unsubstantiated assertion. This being the case, the vitality of transcendentalism during the nineteenth century seems a fit subject for wonder. As has been indicated previously, the explanation seems to be found in the fact that the two conceptions of immediacy which Kant failed to keep apart have been persistently confused since his day; and it is to this confusion that transcendentalism owes its influence and prestige.

In order to make clear the nature of this confusion, it is necessary to determine more precisely than is done by Kant the character of the immediacy which is involved in the critical philosophy. The repudiation of sensationalism, if it is to mean anything at all, must mean that a different conception of immediacy has come into play. One of the chief merits, indeed, of the "Critique of Pure Reason" is that it is a *reductio ad absurdum* of its own premises. The question which forms its starting-point is how thought can assert its authority over that which is immediately and independently "given." The conclusion at which Kant arrives is that thought can claim authority because there is no such immediate "given" as the argument presupposed. Instead of such immediacy, we have an immediacy of a totally different kind. If we turn to the situations in which the distinction between datum and meaning is present as an experienced fact, we find that the distinction occurs whenever there is a question for which an answer is sought. The "immediate" or the "given" in such cases is that part of the situation which is subjected to scrutiny; the meaning is that which is tentative or hypothetical or "present-as-absent." The distinction is transitory and exists for the sake of a purpose or end; it is indicative of the fact that the situation in which it occurs is in process of reconstruction. Which element in the situation is to function as datum is determined by the end to be attained. The point is that datum and meaning determine each other; they are derivatives which, when held in abstraction from each other, give us sense and thought in the sense of historical dualism.

This interpretation of immediacy, moreover, necessarily predetermines the conception of "reality" and "truth." Having escaped the incubus of the transcendental, we are enabled to say that the facts with which we become acquainted, so far from being appearances of a more ultimate "reality," are just what they are found to be and nothing else. Any experience, such as the recollection of last week's events, the reflection upon the characteristics of a geological epoch, or the visual perception, clear or confused, of physical objects, is just so much fact, and is hence a datum in any philosophy which has a proper understanding of its own aims and limitations. The question what it "really" is can not properly be asked, save with reference to its "truth" or serviceableness in the guidance of expectation or other behavior. The "real," in short, is whatever we find; it is a domain which tolerates no hierarchy or privileged class. The "true," on the other hand, is that which leads or guides in the way that it promises to do, and hence it is subject to a test or criterion which the true idea itself determines or points out.

A consistent interpretation of immediacy, then, compels us to discard the conventional distinction between "appearance" and "reality." According to the present contention, the fallacy of transcendentalism lies in the fact that sense data are first detached from their context by abstraction, and then reunited with it through the agency of transcendental factors. When sense data are thus detached, the "being" or "reality" of the facts with which we deal becomes a legitimate problem, since we are compelled to regard them as a combination of the non-temporal or transcendental with the temporal or particular. This combination makes our starting-point hopelessly opaque, as Bradley has shown in pitiless detail. But if, on the other hand, we give to immediacy a purely functional interpretation, we escape the opposition between experience and a finished reality which inheres in the idealistic position, in spite of its rôle as the self-appointed nemesis of dualism. This functional interpretation construes the distinction between datum and meaning in terms of a change taking place in things, a change which has as its goal the guidance or control of adjustment. This procedure furnishes us with an entirely different starting-point. It means that all experiences are equally real, though not all are equally true or serviceable. That is to say, the "real" is not a question if we regard knowing as a change which occurs in things for the furtherance of certain ends, but becomes a problem only in so far as we oppose experience and its object, the latter being considered as a finished real passively waiting to be "known."

It was indicated previously that Kant is at no particular pains to develop the implications of this new immediacy to which his argu-

ment leads. The very argument which logically compels the inference to a new immediacy apparently shuts off the light. Between the premises and the conclusion lies the machinery of the Kantian transcendentalism; and neither Kant nor his successors seems to have realized adequately that the rejection of abstract sense impressions carries with it the rejection of the transcendental elements with which they are correlated. This retention of the transcendental elements compels both sense and thought to lead a double life. In so far as the conclusion of the Kantian deduction is emphasized, they are simply derivatives, their status and nature being determined by the function which they fulfil. But in so far as the bias of transcendentalism prevails, they are original constituents or ingredients of the situation from which functional sense and thought proceed by derivation. In other words, objective idealism shelters two fundamental and correlative ambiguities. It treats immediacy both in the sense of historical empiricism and in the sense of present-day functionalism; and it confuses thought as a function in the reorganization of a situation with thought as a transcendental or "constitutive" element. Hence it results that the duality of sense and meaning is often regarded as a "discrepancy," for which there is no remedy within the bounds of human experience. The thought of an object, instead of being treated simply as the "presence-in-absence" which is the indispensable correlate of the "presence" of sense material, is "a 'what' which so far as it is a mere idea clearly *is* not, and if it also *were*, could not be called ideal. For ideality lies in the disjoining of quality from being."[7] Meaning is "a content which has been made loose from its own immediate existence and is used in divorce from that first unity."[8] Here we have once more the separation of "immediacy" from thought, and so the relation of the two forthwith presents a formidable problem. The two can not be wholly disjoined, as the Kantian conclusion attests; hence the puzzling fact that "the essential nature of the finite is that everywhere as it presents itself its character should slide beyond the limits of its existence."[9]

It seems clear that this ambiguity in "immediacy," with its correlate ambiguity in "thought," is essential to the standpoint of objective idealism. If immediacy were consistently treated as absolute, the outcome would not be transcendentalism but sensationalism. Or if immediacy were consistently treated as relative, then again the outcome would not be transcendentalism but some form of functionalism. But, directly or indirectly, the two meanings of immediacy are used in alternation. Bosanquet, for example, states that "it

[7] Bradley, "Appearance and Reality," p. 163.
[8] *Ibid.*, p. 164.
[9] *Ibid.*, p. 166.

makes no essential difference whether the ideas whose content is pronounced to be an attribute of reality appear to fall within what is given in perception or not. We shall find hereafter that it is vain to attempt to lay down boundaries between the given and its extension. The moment we try to do this we are on the wrong track."[10] In other words, the distinction between the given and its extension can at best be only a relative and fluctuating distinction, depending upon the character of the given situation. To all intents and purposes, however, a hard-and-fast boundary line is drawn on the second page preceding the passage just quoted; and as might be expected, the line is run in accordance with the landmarks set up by the Kantian transcendentalism. "The ideas used in judging are not particular existences but general significations or objective references. No mere mental occurrences as such, no series or combination of particular images, can by any possibility be a judgment." The given and its extension apparently tend to fall apart and hence to necessitate a resort to the transcendental in order to unite them again. Thus the following quotation excludes ideas or meanings from presentations, on the ground that the idea is simply a "habit or tendency": "If therefore we are asked to display it [the idea] as an image, as something fixed in a permanent outline, however pale or meager, we can not do so. It is not an abstract image, but a concrete habit or tendency. It can only be displayed in the judgment, that is, in a concrete case of reference to reality. Apart from this it is a mere abstraction of analysis, a tendency to operate in a certain way upon certain psychical presentations. Psychically speaking, it is when realized in judgment a process more or less systematic, extending through time and dealing with momentary presentations as its material. In other words, we may describe it as a selective rule, shown by its workings, but not consciously before the mind."[11]

A similar confusion is present, as I venture to think, in an exceptionally subtle and interesting form, in Royce's "World and the Individual." The world as fact, we are told, must be subordinated to the world as idea. When we study the idea, we find that it includes an internal meaning and an external meaning, the latter being "that attempted correspondence with outer facts which many accounts of our ideas regard as their primary, inexplicable, and ultimate character."[12] There is, however, no purely external criterion of truth; hence it is futile to "stand apart from the internal meaning, from the conscious inner purpose embodied in a given idea, and still attempt to estimate whether or no that idea corresponds with its

[10] "Logic," Vol. I., p. 77.
[11] "Essentials of Logic," p. 78.
[12] Vol. I., p. 26.

object.''[13] The experienced inner meaning determines its own task, its own special form of ''correspondence.'' Hence we can define the external meaning as that experience which fulfils the internal meaning. ''The fulfilment of the internal meaning of the present idea would leave no other object defined by this idea as an object yet to be sought.''[14]

This subordination of the world as fact to the world as idea has the immense advantage that it eliminates the problem how we are to copy or ''apprehend'' an ''external world.'' The world as fact, in Royce's treatment, corresponds to the position which holds sense and thought in separation from each other. Its criterion of truth is external, whereas from the standpoint of the world as idea, the criterion becomes internal. To say that the meaningful experience determines its own form of correspondence is to deny the separation of sense and thought, or of ''experience'' and ''object.'' The distinction between the two becomes functional and relative, in the sense previously indicated. It does not occur save where there is a problem to be solved, a task to be performed, a purpose to be accomplished. ''A color, when merely seen, is in so far, for consciousness, no idea. A brute noise, merely heard, is no idea. But a melody, when sung, a picture, when in its wholeness actively appreciated, or the inner memory of your friend now in your mind, is an idea. For each of these latter states means something to you at the instant when you get it present to consciousness.''[15]

Up to this point the position under consideration is to all appearances in entire agreement with that of functionalism. How meanings can determine their own reference ceases to be a problem when meanings are interpreted as the ''presence-in-absence'' of their objects. This agreement ends, however, when our human experience, in the hands of its idealistic inquisitor, signifies its willingness to be damned for the glory of the absolute. The immediacy which presupposes the object gives place to the immediacy which is divorced from its object. Our attention is first of all called to the fact that ''our direct experience gives us only the passing data and the fragmentary ideas of the moment.'' This direct experience is compared with ''the range of valid possible experience,'' which ''is viewed by me as infinitely more extended than my actual human experience.''[16] A valid possible experience, when known as such, is the experience of a fact which is present as absent. But according to Royce this validity is ambiguous. It covers both the validity which is tested

[13] Vol. I., p. 308.
[14] Vol. I., p. 339.
[15] Vol. I., p. 24.
[16] Vol. I., p. 259.

and that which is not. That is, validity is a name both for the experience in which the valid idea finds fulfilment and for the experience in which a fact is presented simply as absent.[17] Considered simply as a matter of terminology, this might be allowed to pass, but the context shows that something further is intended. Only the direct or fulfilling experience, we find, can give us the definiteness which characterizes true being. Until the fulfilling experience supervenes, we have, so far forth, bare validity, mere universality. Hence the question: "What is a valid or a determinately possible experience at the moment when it is supposed to be merely possible?"[18]

To this question the appropriate answer is that it makes an assumption which is both incompatible with Royce's starting-point and untrue to fact. The import of the functional interpretation of immediacy is precisely that datum and meaning can not be separated from each other. It is hardly good logic to begin by making the meaning or "possibility" organic to the given experience, and then to detach it in order to condemn it as "bare validity" or "mere universality." Such a procedure implies the very opposition between sense and thought which constitutes the point of departure for Kant. This separation serves only to justify the appeal to a transcendental, which thereupon becomes at once the sole abiding place for all individual fact, since the latter necessarily remains for us "the object of love and of hope, of desire and of will, of faith and of work, but never of present finding."[19]

It appears, then, that despite the originality of Royce's treatment, his procedure, from the angle of the present criticism, is essentially the same as that of his predecessors, save that he both starts and finishes with the functional point of view. The immediate and the mediate are held apart just long enough to justify the introduction of the transcendental, in order to heal the breach which has thus been created. We have the same alternation between types of immediacy, the same triumphant ushering-in of the transcendental, and, finally, the same bland denial that any separation between the immediate and the mediate was ever made or intended.

A proper reconsideration, then, of the concept of immediacy will show that the "higher standpoint" which Kant enabled us to reach is not that of objective idealism but of functionalism. The former owes its being and peculiar character to the very presuppositions which Kant is supposed to have destroyed once for all. When these presuppositions are set aside in fact and not merely in appearance, we rid ourselves of a troublesome element of vacillation and

[17] *Cf.*, especially, Vol. I., pp. 259–261.
[18] Vol. I., p. 260.
[19] Vol. I., p. 297.

mystery; and the problems which the absolute is invoked to explain find a solvent in our human experience.

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WHAT KIND OF REALISM?

IN a previous paper in this JOURNAL,[1] I attempted to summarize the arguments against "natural" realism—that doctrine which purports to crystallize the view of the "natural" man, that the very data of his visual and tactile experience are identical with, *i. e.*, go to make up, the "things" in the midst of which he lives and moves. According to that view, the "green" that my experience includes when I look at a tree exists at the tree-point in the world-order, and is not a copy or an effect of what there exists. That is to say, "natural" realism ignores the representative nature of perception, ignores the distinction between the stimulus of perception, the source from which (in the case of sight) ether-waves radiate, and the datum existing in experience after those waves have hit the eye, ignores, to say no more, the time-difference between the stimulus-fact and the experienced-fact.

Obvious as this representative nature of perception is, the temptation to "epistemological monism" is so great that it is a satisfaction to read, in one of Professor Dewey's recent papers,[2] that "it is easily demonstrable that there is a numerical duplicity between the astronomical star and the visible light," that "the astronomical star is a real object . . . the visible light is another real object." Generalized, this is to say that there is a numerical duplicity (but not necessarily a difference in substance, as, physical *vs.* mental) between stimulus-fact and sensation-fact. With these words, as with much in Professor Dewey's characteristically brilliant paper, I find myself in joyous sympathy. Surely we can all agree that the qualia which exist in a man's experience, and which are to him, as he looks, a given star or tree, are not the same existences as the "astronomical star" or the botanical tree. Without asserting what the star and tree of physical science are or are not, at least this "visible light," this visible greenness, are numerically different existences, existing later in time, and largely dependent for their nature upon the characteristics of the perceiver's sense-organs and brain.

Our thanks then to Professor Dewey! But there are certain other statements of his that seem to me questionable and so may serve

[1] Vol. VIII., page 365.

[2] This JOURNAL, Vol. VIII., page 395.

as texts for the inqury that I suggested at the close of my previous paper and propose here to outline. He tells us that "contemporary realists have frequently and clearly expounded the physical explanation of such cases as have been cited"—the converging railway tracks, the star, pressing the eyeball, etc.—and is frankly vexed with the idealists for not accepting this explanation.[3] Now, personally, I am not an idealist. But if, as one would judge from the columns of this JOURNAL, the idealist is the under dog nowadays, let us be sure to do him full justice! It seems to me, for one, that he has a simple and consistent account to give of these cases, and therefore, even when an adequate realistic account is offered him, need not necessarily bite at the bait; and, moreover, that the accounts which the neo-realists have been offering him of such cases are for the most part so far from adequate that he is thoroughly justified in considering them still as cases that make for his view. Surely, if he is careful in his phraseology (but the realist must remember that in this matter the idealist is at a disadvantage, the practical language of every day being hopelessly realistic, and the expression of the facts in consistently idealistic language a clumsy and confusing matter) he does not commit the fallacy which Professor Dewey ascribes to him. He does not begin, for instance, with a single realistic object, and then, on pushing the eyeball, decide that "there ain't no such animal." He simply finds that on a realistic basis such an experience is difficult to explain, whereas it is very simply statable on an idealistic basis, as: when a single-object experience is followed by a pushing-the-eyeball experience, there is thereupon a double-object experience. Of course some idealists, especially the earlier ones, have put their arguments in ways that justly provoke criticism. But the underlying meaning of these arguments remains a sharp challenge to realism.

The point is, that all these cases can easily be described in terms of actual and potential sensations, while a description in terms of objects leads to grave difficulties. Suppose, for example, the realist is looking at a tree. The idealist would have said that he was having a tree-experience; but the realist says that this tree-that-he-sees is a physical tree, outside of him. He then shakes his eyeball. The tree-that-he-sees moves. But is it conceivable that a physical tree outside of him moves when he shakes his eyeball? So long as that green datum was still it was easy to think of it as a physical tree "out there." When it moves, it is no longer easy so to think of it. No wonder the idealist loves such cases! Especially since early realism was of this "natural" type. But now, if the realist retracts his naïve belief, and admits, with Professor Dewey and the present

[3] *Ibid.*, page 395.

writer and probably most contemporary realists, that the tree-datum-that-exists-within-his-experience (the moving-tree-datum—let us call it *existence B*) is an effect of but not identical with the tree-from-which-ether-waves-radiate (*existence A*), this difficulty is solved, but another arises. The coast is by no means yet clear for the realist. "Frequent and clear" explanations of the situation may exist in contemporary realistic writing, but where, oh, where are they to be found! The crux of the difficulty is this: *where* in the world of the realist does *B* exist? Must we not admit that unless the realist can give a thoroughgoing answer to this question, the idealist still has rather the better of the argument?

That there is a satisfactory answer to this question, and that a complete realistic explanation of the situation in perception is possible, I do not doubt. Several attempts at answering it have been made, but they are not free from objections and have generally been rejected by realists. It seems actually to be the case that the average realist refuses to recognize the need of explanation. When he has declared that perception is a "perfectly natural event," and has shown that a camera likewise produces an image which is an effect and representative of an outer object, he seems to think he has solved the problem. But the fact is, he has not touched it. There are more existences to account for in the perception case than in the camera case. The organism is indeed like a camera. There is produced in the brain through the eyes a physical perception-event (call it *existence C*) which varies concomitantly with the object looked at, and may therefore be called not only an effect, but in some sense a representative of that object—the more legitimately, as it actually serves as a clue for the guiding of the organism in its dealings with it. But does the realist think that this brain-event, *C, is* the green-moving-datum, *B?* If not, where does this latter existence, the surest of all existences, have its habitation? Where are we to put it in our physical scheme? If we have no place for it, how can we think we have given a clear explanation of the facts of perception?

We are not allowed to say that it exists in the mind. The very idea that we have minds seems to be repugnant to the neo-realist. And indeed, if such a statement were made as an explanation of the difficulty, it would be but a verbal one. Calling the fact *B* mental, solves no problem. We have still to ask how it is related to the other existences, *A* and *C*. Here is a well-known physical chain of events, from *A*, through ether-waves, eyes, and nerve-waves, to *C*, and then out again into some muscular reaction. But nowhere in this chain of events do we find *B*. The physical order seems complete and self-sufficing without it. There is no room for it. Instinctively we identify *B* with *A*. It is the tree, what we see of the

tree. But if my previous article holds, if Professor Dewey's statement holds, that "there is a numerical duplicity between the astronomical star and the visible light," between, in this case, the botanical tree and the visible green-moving fact (for the only difference between the two cases is that the time-difference between *A* and *B* is more striking in the former case), that refuge is definitely barred out. *B* exists at a later moment than *A*. *A* may have been annihilated in the meanwhile and may not be existing when *B* exists. *B* does exist simultaneously (or at least nearly simultaneously) with *C;* that is all that we seem to know about the relation of *B* to the *A–C* chain of events, except that *B,* like *C,* seems to be, in some sort, a representative of *A,* since it is the sign in our experience of our dealings with *A*. Are we to be left then with our *B*'s simply hanging on to our *C*'s, without any real footing in the world, with a time of existence but no place? If we call them mental, we have the well-known "psychophysical parallelism" between our *B*'s and *C*'s. This is certainly a mysterious relation; mental *B*'s clinging like barnacles at certain spots in the physical universe, but not really *being* there. If we call them physical, we have an equally mysterious physicophysical parallelism, a second set of physical realities existing at the moment of our *C*'s, but still with no place found for them. Truly, they are adrift in the deep!

One reason for not calling our *B*'s mental lies perhaps in the dualistic implications of that word. The neo-realist is convinced (one wonders if it be not sometimes an *a priori* conviction rather than a humble generalization from experience!) that there are not two substances, mind and matter. Therefore we must call everything "physical"; or, at least, "natural"—"mental" being thus made equivalent to "supernatural"! Professor Dewey likewise waxes satirical over the habit of calling such *B*'s as the visible convergence of railway tracks, or the vsible light of a star, mental. "Is a photograph, then, to be conceived as a psychical somewhat?"[4] But in the case of a camera (apart from perception by an observer) there *is* no *B;* there is only a chain of events loosely similar to the *A–C* chain of object-to-brain events. There is but one event at the moment when the photograph is taken, not two; a certain molecular change in the plate, corresponding to *C,* the molecular change in the brain, or to an earlier event in the *A–C* chain, the molecular change in the eye. There is no datum-within-experience, no *B,* existing at that moment, as there is in the case of perception. There is no mysterious parallelism, no problem, nothing that there is any temptation to call mental.

Personally, I disbelieve in the dualistic theory, and should be

[4] *Ibid.,* page 393.

quite willing to give up the word "mental" altogether. But I can not see why it should be such a red rag to a realist. Let us agree that any dualistic implications are illegitimate in advance of the establishment of a dualistic theory, and let us use the word in a merely denotative sense, to include our *B*'s, and such other facts as dreams, wishes, pleasure, sorrow, and the like, for which there is likewise no known place available in the physical world. We shall still find the word a useful generic term for these numerous, important, and indisputably real facts. It is, at any rate, the commonly accepted name for these facts. No doubt, the natural man looks upon these same *B*'s as the actual things among which he moves, *i. e.*, as if they were the *A*'s which cause them, and at such times he calls them not mental, but physical. But as soon as you show him the impossibility of that "natural" realism, he hastens to call his perception-datum mental, the green-moving-datum, *e. g.*, a mental image of the really outer tree. It may still be that this fact, *B*, belongs to the same world as *A* and *C*, that it is as "natural" an event as the photographic image of a scene or the echo of a sound. Nevertheless, why disdain the common name for it? I hear a partial repetition of a sound. Why jump to the conclusion that it is an echo? The only answer is, that is what we *call* it. Why jump to the conclusion that these particular events we have specified are "mental"? The only answer is, again, that such is the common generic name for them.

It is presumably true that "the seen light is an event" "standing in a process continuous with the star." Though, as to that, if it can not be located anywhere in particular, and if it has no discoverable relations of energy with any part of the physical chain of events proceeding from the star, it is difficult to see how knowledge can have "supervened" that it does stand in such a continuous process. And, moreover, even granting that it is a link in the process somewhere, is it safe to assert that "since the seen light is an event within a continuous process, there is no point of view from which its 'reality' contrasts with that of the star"?[5] Certainly the reason why the writer has, at times, spoken of the "real" star, contrasting that existence with the "perception of the star," has had nothing to do with any denial of the place of the latter in a continuous process. The "real" star is the star that astronomy describes, the star that is moving at so many miles a second through space. The "real" tree is the tree the botanist describes, the tree that we point to and walk round. These existences, the *A*'s, have their definite and well-known place in the world order. The *B*'s, the data of our experience, are none the less real, but they are less really the star and the tree; they are effects in our consciousness (or on our organisms, if you choose,

[5] *Ibid.*, page 395.

and are prepared to show *where* in the organism), representative to us of star and tree, but distinct existences. The visible light, the *B* of which the "real" star is the *A*, figures to us as the star when our attention is upon that visual experience. But *it* is not flying through space at so many miles a second; *it* is not composed of billions of whirling atoms, etc., etc. So, not to speak of the ambiguous status of these *B*'s in the world, there is as much reason for speaking of the *A*'s as the "real" things as there would be in discriminating between the "real" landscape and the picture of the landscape on a camera-plate. The latter is real enough, but it is not the real *landscape*.

We have then our *A*'s, the "real things," and we have our *C*'s, the brain-perception-events which are effects and in some sense representatives of them, and our *B*'s, the data of conscious perception, which exist synchronously (or at least nearly so) with our *C*'s. According to what we proceed to do with our *B*'s will be our type of realism. The "natural" realist identifies them, *per impossibile*, with the *A*'s. The atomistic realist crams them all into one monad or arch-atom which is located somewhere, but no one can say where, in the brain. The dualistic realist asserts that they get into the causal chain in the midst of the *C*'s, but gives them no place in the three-dimensioned world; they somehow get their fingers in the brain-pie without really being there. Another type of realist puts them frankly in the brain, in between or hanging on to the *C*'s. One variety of this type of theory is that of Professor Montague, which puts the *B*'s wherever we speak of "latent energy" in the brain. And finally, though not of course exhausting all contemporary theories, the panpsychic realist (who has a better name for him?) identifies the *B*'s with the *C*'s, asserts that if we knew enough about what we call brain events we should discover that they really are conscious events.

This last theory is that of the present writer. Space forbids its defense at this time. But the object of this paper will have been attained if it sets any one thinking of the problem a little more sharply than before; if it helps any one to realize that there is a problem here. If we are to be realists, as we seem determined to be, let us think our realism through. Let us not think that by calling perception a "natural" or a "physical" process we have solved the very real and difficult problem of perception, or have won the right to jeer at idealists for clinging to their account of the matter.

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DISCUSSION

EXPLICIT PRIMITIVES: A REPLY TO MRS. FRANKLIN

I WISH to offer a rather belated reply to Mrs. C. L. Franklin's article on "The Foundations of Philosophy: Explicit Primitives."[1] I am aware of the danger of crossing words with Mrs. Franklin in the supposedly special field of symbolic logic, but I am nevertheless moved to suggest, in response to her demand for explicit primitives, that a primitive is an illusion and an explicit primitive a contradiction in terms.

Briefly, my position would be that when a term has been made explicit, it is then a party to a comparison and is thus involved in a relation to another term. Since each term now depends upon the other for its definition, neither can claim priority, much less primitiveness. The locomotive may precede the train and pull the train, but if there is no train to pull there is no locomotive. At least, in that case, the locomotive would call for a new definition in terms of its relation to some other things. But if there were no other things, the locomotive would have no character whatever. And therefore I say that the very notion of a primitive is an illusion.

This is logical commonplace. So much so, however, that I am at a loss to account for the idea of a logical primitive, or even of a logical prior, except as a confusion between a logical relation and a certain familiar mechanical relation, which our logic has inherited from Aristotle and which owes its continued support to its plausibility for unthinking common sense. Mrs. Franklin suggests the point in the "*Foundations* of Philosophy." Now, as we all know, a house must rest upon a foundation, and when the foundation is removed the house falls; that is to say, the foundation is a prior condition to the superstructure. But to assume that knowledge must be thus "founded" is to imitate those of the ancients who affirmed the impossibility of the antipodes. For our human structures, indeed, the ultimately universal foundation is the earth. The earth is therefore a universal ultimate, or "primitive." But a primitive in knowledge marks only the point where knowledge ends. To make it a "foundation" of knowledge is then to found knowledge upon ignorance.

Mrs. Franklin appeals for authority to the logic of mathematics. Now, according to tradition at least, mathematical method consists in laying down a primitive—an axiom or postulate, or what not, which by definition is made an explicit primitive—and then in de-

[1] This JOURNAL, Vol. VIII., page 708.

riving its consequences; and when the primitive is laid down, the consequences are supposed to be not yet in sight. Otherwise there would be danger of a "circle." But we know that the manuscript of a mathematical work is usually completed before the first pages go to press; hence, the mathematician knows whither his primitives are to lead if the reader does not. The comparison will seem irreverent, but I can not avoid saying that the usual process of mathematical deduction reminds me of nothing so much as the magician who appears before his audience in a tightly fitting dress-suit and then from a roll of tape held between his thumb and forefinger extracts, among a number of other things, two jars of goldfish and a live goose. One may test the justice of the comparison by observing the operation whereby even so critical a mind as Poincaré[2] derives a whole number-system from such ostensibly innocent primitives as $x + a$ and $x + 1$ (the latter of which consists in adding a *number 1* to a *number x*). To the uninitiated it would seem that, while the magician mystifies only his audience, the mathematician mystifies also himself.

In the mechanical world, as conceived by common sense, the foundation supports the superstructure, but the superstructure adds no strength to the foundation. In the world of knowledge, I should say, the first principles are just as much supported by the derivations as the latter by the former. Take a mathematical axiom and ask what it means; it means just as much as may be derived from it, and no more. How far is it true? It is true just as far as it yields a coherent system of consequences. That is to say, in a system of *thought* no feature is necessarily prior to any other. Priority is here a matter only of convenience of derivation, as determined by the point of view to which the argument appeals; or it may be a matter only of the paging of the book. Because, however, a book must have a page-order, and a discourse a beginning and end in time, it does not follow that there must be an order of precedence in the ideas. Again, take a witness supposed to be absolutely truthful, so that the truth of what he is to testify will only *depend upon* his veracity; make this supposition as absolute as you please, you can never make it so absolute that his veracity will be unaffected by the nature of the testimony which he is to give. It is just as absurd to speak of a science as being, in Mrs. Franklin's phrase, "at the beginning of things." Where is the beginning of things? If you locate it in the principles of physics, or of mechanics, or even of pure mathematics, I may reply that these "fundamental" principles depend for their final justification just as much upon their working out in

[2] "Science and Hypothesis," Chapter I.

biology, or upon what we decide about the freedom of the will, as conversely.

Mrs. Franklin points out that a failure to make your primitives explicit is apt to result in a "circle in definition." But for my own part, although I stand for "straight thinking," and although I should be at a loss to invent a circular system of logic as a substitute for the rectilinear system of Aristotle, I find it difficult to see that the circle is not a better figure for thinking than the straight line. At least I should say that the test of a finally transparent idea is the ability to argue from *b* to *a* as readily as from *a* to *b*. To say that circular thinking leaves you just where you were seems to me not quite true—this seems to refer to circular walking. In the first chapter of "Pendennis" I find the Major reading his mail. "But," you say, "who is the Major? Let us first define our terms." "Well, the Major is Arthur's uncle." "But who is Arthur?" "Why, he is the Major's nephew." This seems very inane, and yet I beg you to note that we are not as free to define the Major in any way we please as we were before, and the question remains whether the paucity of the result is not due solely to the smallness of the circle. Can we deny that the whole course of the novel, by virtue of which alone we are enabled to say quite definitely who, after all, the Major was, is anything more than an extension of just this circular process? And can we then point to any absolute difference, especially to any "abstractly logical" difference, between the plot of a novel and a mathematical system, or a really organized natural science? Mrs. Franklin cites, as an illustration of the vice, Clerk-Maxwell's definitions of matter as "that which may have energy communicated to it," and of energy as "that which passes from matter to matter." But it is hardly true that these definitions are altogether futile; at least one learns that energy is communicable and, by implication, that matter is not. Mrs. Franklin seems to hold that a definition must settle the character of its object once for all, that is, must be finally explicit, if it is to do any defining whatever. Hence it is, no doubt, that in a "sound epistemology" consciousness must be "the first great indefinable." But in a world where everything is involved in everything else, nothing can be defined once for all; and if consciousness is wholly indefinable, we shall be compelled, not to stop talking, perhaps, but at least to stop thinking about it.

As a matter of fact, however, any actual process of thinking is far more circular than rectilinear, and I am unable to see how it could or ought to be otherwise. Suppose that one is writing a book. On the rectilinear theory, the first chapter should be written first and once for all, and in writing this chapter the author ought himself to be as naïve with regard to the outcome in later chapters as he

may, perhaps, suppose his reader to be. In other words, the later parts of the argument or the story should only *depend upon* the earlier. But of course this is never the case. Indeed, it is notorious that the first chapter is the hardest of all to write, and probably the chapter which is to undergo the greatest amount of revision; first, because the ideas can never be so clear as they will be after writing the whole, and secondly, because of the extreme difficulty of making any part of an argument clear to a reader who is not more or less familiar with the whole. Hence, though we begin with the first, after each new chapter we return and revise and we never cease revising, here, there, and everywhere, until, to our view, there is a *mutual* harmony of all. And upon this mutuality of dependence the argument is finally "founded."

Mrs. Franklin tells us that "Nothing must be admitted . . . in the way of terms . . . or propositions . . . except upon rigid inspection and fully aboveboard." I find it difficult to characterize this advice appropriately and yet with proper courtesy. For it reminds me both of my own first philosophical paper and of the attitude of many of my students, especially of those who are trained in mathematics, just when they begin to think about philosophy at all. The trouble with philosophy is, they tell me, that it fails to define its terms. The answer is obvious. Popular opinion to the contrary, students of philosophy are, at least, not less conscientious in their thinking and their expressions than other persons. Nor are they less disposed to recognize the practical wisdom of "Be sure you are right and then go ahead." But had this been their fixed rule, there would be no philosophy. For, in the end, the trouble is not with the definitions but with the ideas. If we could make the ideas clear, we could easily define them; or, rather, the clarification and the definition would be one and the same thing. But the clarification of the ideas is just the beginning and the end of what philosophy has to do.

Having said something similar to this in a paper published several years ago, I was accused, rather, I was offered the right hand of fellowship and a certificate of good standing in the school of pragmatism. I have been unable to accept this generous, though embarrassing, invitation, but I will not say that the doctrine is not pragmatism, because I do not know what pragmatism would exclude. My belief is, however, that the foregoing criticism of the conception of primitives should belong in any view which makes coherence the test of truth.

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REVIEWS AND ABSTRACTS OF LITERATURE

Charles Darwin and the Origin of Species: Addresses, etc., in America and England in the Year of the Two Anniversaries. EDWARD BAGNALL POULTON. London: Longmans, Green and Co. 1909.

The year 1909 was at once the centenary of the birth of Charles Darwin and the fiftieth anniversary of the appearance of his greatest work. The occasion was fittingly commemorated by scientific meetings and addresses in all parts of the world. Professor Poulton, as a leading exponent of the Darwinism of twenty years ago, and an active investigator of certain difficult evolutionary problems, was inevitably an important contributor to some of these programs, both in England and in America. Considering the circumstances of its preparation, it is no damaging criticism of the present volume to say that it contains little that is new, and little, indeed, that the author has not himself already told us.[1]

To the reviewer, the most interesting pages of the book relate to Darwin's personality and to his frame of mind in dealing with various scientific problems. In this regard, he will ever remain as an ideal to successive generations of younger investigators, whatever may become of his special hypotheses in the field of biology. A number of hitherto unpublished letters are introduced by Poulton, which serve to confirm the impressions which the world has already formed of the great naturalist's modesty and his boundless sympathy with the work of others.

In recent years, along with the growing mass of legitimate criticism of certain of Darwin's theories, there has sometimes been displayed a tendency to belittle his scientific attainments, even to the point of charging him with superficiality and a proneness to forming unwarranted conclusions. Indeed, it does not appear difficult to select passages from Darwin's writings in support of this view. Such charges reveal, however, an unfortunate lack of historical perspective. To begin with, Darwin was a *naturalist*—a thing almost impossible at the present time—and the data for his speculations were drawn from every branch of biology, as well as from geology, geography, and other sciences. This, indeed, was inevitable for the man who should establish the theory of organic evolution. To the present-day specialist, who must concentrate his activities upon a very few organisms viewed in a very few relations, the work of all the great pioneers in his science must, in a sense, seem superficial. The latter were forced to admit much evidence provisionally, which the twentieth century experimentalist would very properly reject as inadequate. Thus alone could the broad outlines of the science be sketched. It is in no way to the discredit of these great pioneers that some of their outlines were later erased in the light of more exact knowledge.

Poulton is at considerable pains to refute that much hackneyed bit of moralizing over the blighting effect of a scientific career upon the esthetic faculties. As is well known, Darwin's own autobiography affords a much-

[1] "Essays on Evolution, 1889–1907," reviewed in this JOURNAL, Vol. VI., page 185.

quoted text in support of this thesis. But Poulton dwells upon the wretched health endured by Darwin throughout nearly the whole of his active life, and points out that this concentration upon his scientific pursuits was, in his case, a condition essential to the accomplishment of his work. Darwin's experience—so often held up to us as a dreadful warning—thus seems to afford no evidence for the mutual exclusiveness of scientific and esthetic development in the same mind. The author cites his own wide acquaintance with scientific men in support of the contrary view, and it is likely that most readers will draw similar evidence from their own experience.

Much of the volume at hand is devoted to Poulton's own speculations in explanation of the colors of certain butterflies and an elaboration of the theories of "mimicry," originally framed by H. W. Bates and Fritz Müller. From the standpoint of organic evolution, these cases undoubtedly raise some very difficult problems, and Darwin himself thought them worthy of considerable attention. To Poulton they become the central theme in his view of nature, and the various hypothetical types of "mimicry" and protective coloration—each designated with a rather unwieldy name—are discussed as fundamental realities, regardless of the very slender thread of experimental evidence on which they depend. It is true that he concedes the "paramount need for experimental research and field observations . . . [which] should be undertaken on the largest possible scale" (p. 191). But for him, the case seems to be pretty conclusively settled without recourse to such experiments, and he later qualifies his demand for investigations of this sort with the assurance that "while human performance is of the deepest interest for the solution of mysteries innumerable, of more profound significance still, for the comprehension of the method of evolution, is the vast performance of nature herself" (p. 201). True, but it is that very performance itself the method of which is here in question. Nature is not yet such an open book that he who runs may read.

Poulton believes that "the Müllerian hypothesis appears to explain a series of remarkable relationships which remain coincidences under any other hypothesis" (p. 191). On the other hand, Punnett[2] has pointed out the existence of some evidence that, in one alleged case of "mimicry" at least, the coloration of two "mimetic" forms, belonging to a single species (supposed to be modeled after two distinct species, belonging to a different family) behave to one another as Mendelian alternatives. "On this view," according to Punnett, "the genera *Amauris* and *Euralia* [the "mimicked" and the "mimicking," respectively] contain a similar set of pattern factors, and the conditions, whatever they may be, which bring about mutation in the former lead to the production of a similar mutation in the latter." The fact that among domesticated rodents (rats, mice, guinea-pigs and rabbits) not only the same colors, but some of the same general types of color *pattern,* have arisen independently argues for the possibility of such an origin of "mimetic" resemblances in insects. This view, like its alternative, is at present wholly unproven, and a final

[2] "Mendelism," pp. 144 et seq.

decision of the question is probably still remote, but the Mendelian-Mutation explanation certainly relieves us of the truly terrible strain imposed upon our imagination by the classical "mimicry" hypotheses, as elaborated by such writers as Poulton.

As regards Mendel's Law, our author has plainly shifted his point of view somewhat since the time when he could refer airily to "Mendel's interesting discovery." He now thinks that known facts "are enough to stamp Mendel's discovery as among the greatest in the history of the biological sciences" (p. 278).

Poulton appears to feel keenly the contemptuous attitude of many of his younger colleagues toward the real founders of the theory of evolution, and deprecates severely the gregarious tendency of the great body of minor workers, who rush to fall in line with every procession which seems to be marching behind a promising leader. I can not refrain from quoting some of the strong words with which our writer seeks to relieve his feelings: "In these later years the multitudes seem, for the moment at least, to recognize a prophet in every reed shaken with the wind. It would be interesting to know the number of forgotten works, of works soon to be forgotten, of works dead before they were born, which have been proclaimed as 'the most important contribution to biological thought since the appearance of the *Origin of Species*.' I would that the multitudes were not mere followers of the fleeting fashions of a day, but that they were right in their intuitions: I would that Newtons and Darwins might arise in every generation. I can not admit that the inability to see them on every side is merely the natural consequence of a cynical and pessimistic spirit" (p. ix). Which one of us has not been in just that mood?

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Schopenhauer's Criticism of Kant's Theory of Experience. RADOSLAV A. TSANOFF. New York: Longmans, Green, & Co. *Cornell Studies in Philosophy*, No. 9. 1911. Pp. xiii + 77.

The purpose of the author of this monograph was "to analyze closely" the three phases of Kant's philosophy which Schopenhauer regarded as most significant, viz., that philosophy must (1) "recognize the purely phenomenal character of knowledge," (2) "realize the primacy of will over reason," and (3) "be kept distinct from theology," and then "to inquire into their consistency and philosophical significance, as well as to determine as nearly as possible their historical value as interpretations of Kant's philosophy." The "inherent incompatibility of the two systems" receives the emphasis rather than "the psychological aspects of the problem." A brief discussion of the literature in English, German, and French shows the need for such a work as this.

The four chapters which constitute the body of the book have the following titles, indicating the nature and scope of the discussion: (1) "The Nature and Genesis of Experience: Perception and Conception"; (2) "The Principles of Organization in Experience: The Deduction and

the Real Significance of the Categories"; (3) "The Scope and Limits of Experience: Transcendental Dialectic"; (4) "Experience and Reality: The Will as the Thing-in-itself." The author's method in treating these topics is to present Schopenhauer's exposition and criticism of Kant with reference to each, and then by quotations from Kant and his own interpretation to show wherein Schopenhauer erred, or was correct. Not infrequently, too, he introduces pertinent material from writers who were contemporary or nearly so, and also makes comparison with recent views which are the outgrowth of the Kantian movement or had a comparatively independent development. The author's own position seems to be "instrumental" and "organic."

Schopenhauer accepted the doctrine of Kant's "Esthetic" "unreservedly," and then made a "clear-cut distinction between *Verstand* and *Vernunft.*" His distinction, however, is not the same as that Kant himself made, and this initial error vitally affected Schopenhauer's further treatment of Kant. It is true that Kant was not always precise in the use of these terms, but his "confusion is the confusion of depths not yet clarified," while "Schopenhauer's lucidity manifests epistemological shallowness."

"The radical fault which Schopenhauer finds with Kant's deduction of the categories," Tsanoff maintains, "is its abstract character. . . . This protest against Kant's abstract formalism is most just; but his own theory of judgment incapacitates him at the very start from indicating the fundamental error." Tsanoff states Schopenhauer's "theory of judgment" briefly, compares it with Kant's, and then takes up the categories in their respective groups. In each case, Schopenhauer's interpretation and criticism are given, together with what seems to the author to be the proper evaluation. The "schematism" is treated briefly, since Schopenhauer was inclined to dispense with it altogether, along with all the categories save "causality," upon the basis of his own distinction between perception and conception. Tsanoff, too, thinks the "schematism" unnecessary, but for a different reason. "A correct diagnosis," he says, "would locate the trouble in Kant's departing from his own ideal of the organization of experience from within and attempting to explain that organization, as it were, *ab extra.* The deduction of the categories, therefore, should be reinterpreted in the true Kantian spirit, its abstract formalism eliminated, and the immanent character of the organizing principles of experience clearly emphasized. This would obviate the difficulty by showing the irrelevancy and the needlessness of any schemata."

In connection with the "Dialectic," Tsanoff admits that Schopenhauer was right in maintaining "that Kant's use of the term 'idea' is essentially different from Plato's," but he also points out that Schopenhauer's use of the same term was not "true to the spirit of the original Platonic doctrine." The origin of these "ideas," as Kant used the term, is indicated, and each is discussed in turn, both from Schopenhauer's and from Kant's point of view. Incidentally, Schopenhauer's interpretation of matter is presented, and the propriety of identifying it with substance denied. Without dwelling upon the discussion of the mechanical and

teleological categories involved in the antinomies, Tsanoff's conclusions may be stated. "In spite of essential differences in standpoint," he says, "which have been at least sufficiently accentuated in the above comparison of their treatment of the teleological principles, Kant and Schopenhauer make the same fundamental mistake. Neither fully realized the essentially instrumental character of all categories. Each and every category considers experience, all of it, from its own point of view. Experience is one, and the categories are its categories, the points of view from which it may profitably be regarded; no one of them can exhaust its meaning, nor can any truly significant category find its own meaning exhausted in any one part of experience, for the simple reason that experience is organic and is therefore not divisible into discrete parts." This, also, clearly indicates the author's point of view.

In his interpretation of the "thing-in-itself" as will, Schopenhauer made what he regarded "as his own great contribution to philosophical thought." At this point, "Schopenhauer's philosophy joins on to the Kantian, or rather springs from it as from its parent stem." "By 'will' Schopenhauer does not mean 'merely willing and purposing in the narrowest sense, but also all striving, wishing, shunning, hoping, fearing, loving, hating, in short, all that directly constitutes our weal and woe, desire and aversion.'" Now while this "will" may have qualities absolutely unknowable to us, "it is by no means an unknown quantity, . . . but is fully and immediately comprehended, and is so familiar to us that we know and understand what will is far better than anything else." Consequently, although "on Kant's basis" Schopenhauer thinks that "metaphysics is impossible," he feels that he himself has ground for "asserting the possibility of an immanent metaphysics, a metaphysics of experience." This view Tsanoff rejects, because Schopenhauer "seeks his ultimate reality . . . in some one sort of experience. . . . The spirit of Schopenhauer's theory of reality" is that "to learn metaphysics, we must unlearn science."

In conclusion, Tsanoff suggests "that Schopenhauer is *not* the true successor of Kant. Instead of being a neo-rationalist, as Kant, on the whole, remained, he is fundamentally an irrationalist, so far as his attitude towards ultimate reality is concerned. He also insists that the "world as idea and world as will are at least as incompatible philosophically as Kant's two worlds of phenomena and noumena. Schopenhauer failed to profit by his own criticism of Kant. . . . Experience must be interpreted in terms of its own self-organizing totality. In the solution of its problems we can ignore no one of its elements or aspects. Cognition is an essential aspect of experience, but cognition is not all; this is the lesson to be learned from the 'Critique of Pure Reason,' and especially from the 'Dialectic.' The same is true of will. . . . Schopenhauer's philosophy . . . represents an endless conflict. . . . His every problem is stated in the form of a dilemma. . . . He never fully comprehended the immanent unity of experience. . . . This is the fundamental defect of his philosophical system, which makes him incapable of

grasping the real problems of Kant's philosophy, and of indicating a consistent method for their solution."

The work, as a whole, is a thorough, scholarly treatment of a particular problem, and is based upon an independent handling of the sources. It should prove very serviceable for an enlarged knowledge of Kant and of Schopenhauer.

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La Nouvelle Psychologie Animale. GEORGES BOHN. Paris: Alcan. 1911. Pp. ii + 200.

American students of animal behavior have come to look upon the work of Dr. Bohn with a certain suspicion. Yerkes[1] thought his earlier papers "not thoroughly satisfactory scientifically, for they continually suggest questions, doubts, and new problems," and Jennings, reviewing "La Naissance de l'Intelligence,"[2] finds that Bohn does not stand "the test as to accuracy and trustworthiness of his scientific results in difficult fields . . . and that such confusion, inaccuracy, and misstatement of fact are almost or quite sufficient to remove the book from the field of science." An American reviewer is likely, therefore, to approach this new work of Dr. Bohn, which is "the continuation and complement of 'La Naissance de l'Intelligence,'" with misgivings. The pudding is hardly better than the anticipation for "La Nouvelle Psychologie Animale," though a brief and clear statement of the author's views bears evidence of bias in favor of a theory of animal behavior which to say the least is but little more than a good working hypothesis. This presupposition in favor of a physicochemical explanation determines not only the author's criticism of other men's results, but it also seems to determine the presentation of the facts.

Relying upon "the more recent studies which have been conceived in a really scientific spirit" (Preface), the author divides his treatise into three parts: "the activities of the inferior animals, the instincts of the arthropods, and the psychical activity of the vertebrates."

The phenomena of behavior in lower animals may be grouped under three principal orders: "tropisms, *sensibilité differentielle,* and *mémoire cellulaire.*" The first is the well-known local action theory of Loeb; the second is the tendency of the animal "to pause, to recoil, and to turn through one hundred and eighty degrees when the environment changes abruptly"; the third group of phenomena are the evidences of associative memory.

In defense of his physicochemical theory, for which he does not cease to praise Loeb, the author attacks Jennings's theory of trial and error and insists that "the movements of infusoria are subject to very simple laws." But when did Jennings deny the explainability of infusorian behavior? If I have understood his work, Jennings's protest has not been against a physicochemical interpretation of animal behavior, but against the ten-

[1] *Journal of Comparative Neurology and Psychology,* No. 66, p. 238, 1906.

[2] *American Naturalist,* No. 43, p. 619, 1909.

dency to find that explanation without considering all the facts. He has insisted on seeing the behavior in detail rather than in bulk and has refused to accept, as final, explanations which are based only on mass observations. This, Bohn does not seem adequately to have realized. There seems a strange tendency on the part of certain writers, the moment you deny the sweeping character of their physical formula, to think that you have abdicated causal explanation altogether and are lost in the realms of mystery.

In the second part, Dr. Bohn reviews the so-called instincts of arthropods, giving in turn the detailed studies on "feigning death," "return to the nest," "food-seeking," "mimicry," and "the social instincts." Instinct he regards as a blanket term covering a "complex of activities, some simple and some complex, some inherited and some acquired in the course of individual life, all, it being understood, resulting from the diverse qualities of living matter, inherited more or less independently, the one of the other" (p. 125). Most experimental students will agree with this tendency to replace the term instinct by more analytic concepts.

"Among vertebrates psychical activity acquires, owing to the brain, a very great complexity" (p. 129). Hence, ten pages devoted to brain anatomy, and then follow fifty-six pages treating in turn the method of Pawlow, the labyrinth method, the puzzle-box method, the method of imitation, and the method of training as these have been applied in the study of vertebrates. Thirty-one of the fifty-six pages are given to Pawlow, evidently because his method lends itself to the support of the author's theory. "The method of Pawlow is infinitely precious for psychology, because, *after a sure fashion, it leads to the discovery of the laws of associative memory among superior animals*" (p. 158, italics mine). Much less important is the labyrinth method because it gives "only synthetic results . . . laws do not appear from the experiments which have been made" (p. 175). However, in the hands of Yerkes and Watson, the author admits this method has given results of some importance. Of still less importance are the remaining methods, since the data that they give are "uncertain and contradictory" (p. 188), and the author contents himself with giving the results with little comment. The method of discrimination recently elaborated in such detail for the study of vision by Yerkes and Watson receives only passing notice.

In the reviewer's opinion the order of merit for the several methods of animal investigation is hardly the one likely to be adopted in the further work of men who are really interested in getting all the facts. If we must have a physicochemical explanation of animal behavior to-morrow it will be well to let labyrinths, puzzle-boxes, imitation, and all go, and theorize ourselves into a state of complacent belief. If we would understand animal behavior it were better to realize that in the case of the vertebrates we have hardly gotten as yet the first inklings of how to attack our problems, that all the methods are yet on trial, and that what we need is refinement of experimental procedure in connection with every method yet proposed. The methods which Bohn rejects have yielded results as important as any which have come from the Pawlow Laboratory, and if it

were not for preoccupation with certain theories he would probably have seen them in a truer light.

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INDIANA UNIVERSITY.

JOURNALS AND NEW BOOKS

MIND. October, 1911. *Mr. Bradley's Doctrine of Knowledge* (pp. 457–488): E. H. STRANGE. – Mr. Bradley's thesis that it is in "feeling" that one directly encounters reality is called in question. The contention that feeling is the original mode of consciousness is challenged, and for the existence of Mr. Bradley's "whole of feeling" there is no evidence. The criticism contains a refutation of Mr. Bradley's doctrine of perception as sentient experience, and judgment as divorce of content from existence. *Mind and Body* (pp. 489–506): J. S. MACKENZIE. – The difficulties arising out of the relations obtaining between conscious states and body center around the doctrine of the conservation of energy, and it is suggested how these difficulties may be met without abandoning the doctrine. Mind is distinguished from conscious states and the problem of its persistence is considered. *Aristophanes and Socrates* (pp. 507–520): R. PETRIE. – An examination of Professor Taylor's volume of essays, entitled "Varia Socratica," relating to Aristophanes's "Clouds" in its bearing upon the historic Socrates. Professor Taylor dismisses the evidence of Xenophon maintaining Socrates's interest in physics and mathematics. This view is opposed, and it is maintained that the caricature in the "Clouds" does not contradict the account given by Xenophon. *Negation Considered as a Statement of Difference in Identity* (pp. 521–529): AUGUSTA KLEIN. – The thesis is that "Negative predication should be interpreted as asserting neither a Difference in Difference (Miss Jones) nor an Identity in Difference (Hegel), but a *Difference in Identity.*" *Discussions: Self-consciousness and Consciousness of Self* (pp. 530–537): G. W. CUNNINGHAM. "Self-consciousness is completely realized only in the experience of the absolute." *Truth as Value and the Value of Truth* (pp. 538–539): J. E. RUSSELL. *A Point in Formal Logic* (pp. 540–541): T. B. MULLER. *Critical Notes:* E. G. Haldane and G. R. T. Ross (translated by), *The Philosophical Works of Descartes,* Vol. I.: A. E. TAYLOR. Natorp, *Die logischen Grundlagen der exakten Wissenschaften:* P. E. B. JOURDAIN. A. D. Lindsay, *The Philosophy of Bergson:* H. W. CARR. A. W. Moore, *Pragmatism and its Critics:* D. L. MURRAY. William James, *Some Problems of Philosophy:* F. C. S. SCHILLER. *New Books. Philosophical Periodicals. Notes.*

REVUE PHILOSOPHIQUE. October, 1911. *Le pragmatisme et le réalisme du sens commun* (pp. 337–367): L. DAURIAC. – Pragmatism has its source in an attitude of mind, perhaps as old as mind itself, but it is the honor of William James to have detached it from rationalism, of which it now appears to be the absolute antithesis. *Les tendances actuelles de la psychologie anglaise* (pp. 368–399): G. CANTECOR. – The

progress and transformations of English psychology in the last thirty years as it appears in the work of Sully, Ward, and Stout. *Méthode de la science pédagogique* (pp. 400–421): L. CELLÉRIER. – The method includes a definition of education drawn from experience, the determination of pedagogical fact, observations of the facts of education, and the study and classification of elementary pedagogical facts. *Analyses et comptes rendus:* G. Dromard, *Essai sur la sincérité:* FR. PAULHAN. G. Simmel, *Soziologie:* DR. S. JANKELEVITCH. E. Durkheim et ses collaborateurs, *L'année sociologique, t. XI:* G. BELOT. A. Dupont, *Gabriel Tarde et l'économie politique:* G. JOUSSET. J. Delvaille, *Essai sur l'histoire de l'idée de progrès:* L. ARRÉAT. *Revue des périodiques étrangers.*

Adamson, Robert. A Short History of Logic. Edited by W. R. Sorley. Edinburgh and London: William Blackwood and Sons. 1911. Pp. x + 266. 5s.

Boden, Friedrich. Die Instinkbedingtheit der Wahrheit und Erfahrung. Berlin: Verlag von Leonhard Simion Nf. 1911. Pp. 80. M. 2.50.

Buchenau, Artur. René Descartes Uber die Leidenschaften der Seele. Leipzig: Verlag von Felix Meiner. 1911. Pp. xxxi + 150. 2 M. 20 Pf.

Busse, Adolf. Aristotles Uber die Seele. Leipzig: Verlag von Felix Meiner. 1911. Pp. xviii + 120. 2 M. 20 Pf.

Oehler, Richard. Nietzsche Als Bildner der Personlichkeit. Leipzig: Verlegt bei Felix Meiner. 1910. Pp. 31. 60 Pf.

Vorlander, Karl. Immanuel Kants Leben. Leipzig: Felix Meiner. 1911. Pp. xi + 223. 3 M.

NOTES AND NEWS

THE New York Branch of the American Psychological Association met, in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences, at the American Museum of Natural History on Monday evening, February 26. The following papers were read: "The Heredity of Mental Traits," Dr. H. H. Goddard; "The Medical Course in Psychology," Dr. F. Lyman Wells; "Rate Norms of Mental Development," Professor J. E. W. Wallin; "Auditory and Visual Memory," Mr. A. E. Chrislip; "The Influence of Narcotics on Physical and Mental Traits of Offspring," Mr. J. E. Hickman.

Dr. J. E. Wallace Wallin, who has been engaged in the psychoclinical study of various types of mental defectives for over two years, and who has recently worked in the clinics at Johns Hopkins Hospital, has accepted a call from the University of Pittsburgh to organize a department of clinical psychology in the School of Education and also to lecture in the summer school on clinical psychology, the education of exceptional children, and experimental education.

UNDER the auspices of the College of Sciences, a series of lectures has been recently given at the University of Illinois by Professor W. Johann-

sen, of the University of Copenhagen. The subjects treated were "The Primitive Conception of Heredity," "The Principle of Pure Lines," "Mendelism," "Complications and Exceptions," "Mutations," "Continuity or Discontinuity."

DR. ELEANOR H. ROWLAND, professor of philosophy at Mt. Holyoke College, has resigned to become dean of women and professor of philosophy at Reed College, Portland, Oregon. Her place at Mt. Holyoke, for the current semester, will be taken by Dr. Kate Gordon.

ON account of illness, Professor Josiah Royce, of Harvard University, has been compelled to give up the course of Bross lectures on "The Source of Religious Insight" and has been given leave of absence for the present academic year.

THE Sarah Berliner research fellowship for women has been awarded to Miss Marie Gertrude Rand, of Brooklyn, a doctor of philosophy of Bryn Mawr College, for her work on the psychology of vision.

DR. W. A. HEIDEL, professor of Greek at Wesleyan University, gave an address on "The Beginnings of Science" before the Middletown, Connecticut, Scientific Association on February 13.

A NEW department in psychology and education is to be established at Swarthmore College next year, of which Dr. Bird T. Baldwin, now professor of education at the University of Texas, will be in charge.

PROFESSOR CASPER RENÉ GREGORY, of the University of Leipzig, is giving a series of lectures at the University of Illinois on "The Development of Science in Germany." Dr. Gregory is the first American-born professor to receive appointment in a German university. He holds the chair of theology at Leipzig.

ELIZABETH KEMPER ADAMS, of Smith College, has been promoted from associate professor of philosophy and education to professor of education.

DR. B. W. VAN RIPER, of Nebraska Wesleyan University, has been elected assistant professor of philosophy in Boston University.

DR. S. P. HAYES, professor of psychology in Mt. Holyoke College, has been granted a leave of absence for the second semester. He will spend the time abroad, chiefly at Cambridge University.

THE Ichabod Spencer foundation lectures are being given at Union College by Professor Hugo Münsterberg, of Harvard University. His subject is "Applied Psychology."

THE death is announced, at seventy-one years of age, of Dr. Otto Liebmann, formerly professor of philosophy in the University of Jena.

DR. JOHN J. TIGERT has been appointed professor of philosophy in the University of Kentucky.

Dr. WENDELL T. BUSH, associate in philosophy in Columbia University, has been appointed associate professor of philosophy.

PROFESSOR JOHN JOLY, F.R.S., has been appointed Huxley lecturer at Birmingham University for the current session.